No one who regards the modern progress of zoology can fail to agree with the view here expressed; but how does it harmonize with Prof. Ehrenberg's main and fundamental doctrine, that organization has no relation to size, and that the Infusoria have all the organs which characterize the higher animal?

Indeed, while we can conscientiously recommend the present work as a very useful assistant to those who are working for themselves, we must caution our readers against the very unphilosophical subservience to the authority of a name which it too often exhibits. Thus, after a discussion of the polygastric theory of Ehrenberg, we find it said of subsequent observers—

"With Van der Hoeven, all coincide in denying the existence of an inclosing wall to the vesicles, and of an intercommunicating tube between them; and all assert the ever-varying number and disposition, as well as the movements (even rotatory) of these supposed stomachs." And yet we are told further on—

"From the preceding conflicting opinions and observations no satisfactory deduction can be made; Ehrenberg's opinions, however, are entitled to great respect, although the theory of a polygastric structure may not admit of demonstration."

We have every respect for Prof. Ehrenberg, but we are really at a loss to understand why *his* opinions, if they be "incapable of demonstration," are more "entitled to great respect" than those of any one else, especially when these opinions are at variance with those of an unanimous host of at least equally competent observers.

Authoritative assertion in science, it is well to remember, is not evidence; it only affords a presumption, better or worse-founded according to the real value of your authority, that evidence may exist. Great authority may be a good ground for a temporary suspension of judgement when opposed to less authority, but it is valueless when opposed to good evidence.

A great authority, whose "opinions are incapable of demonstration," is a sort of scientific balloon, brilliant to look at and much gaped at of the multitude; but containing nothing but gas and sand, and liable to come down with a crash at the touch of the first critical penknife.

A Synopsis of the Family of Naiades. By Isaac Lea. Third edition, greatly enlarged and improved. Philadelphia, 1852. 4to.

By the title of this work we might be led to suppose it would afford the conchologist the means of determining the species of this very interesting family of freshwater bivalve shells, or at least give a reference to the books where the species are figured and described, and the countries they inhabit. Unfortunately the author has not thought this desirable. The work simply consists of a list of 767 species, each followed by the names by which other authors have described it, accompanied by an abbreviation of the name of the author.

Then follows a list of the species of each subgenus, arranged in alphabetical order, under Europe, Asia, Africa, North and South America, and New Holland, as they happen to inhabit.

The author, who has been studying these shells for many years, appears to have set out with the determination to make the 'Synopsis' afford the collectors of these shells as little assistance as possible Thus, he does not mention in which of the works of the various authors cited for the names, the shell under consideration is described or figured, or refer to any general work on the subject in which they are described, nor even to the very numerous species which he has himself described and figured for the first time (more than half the species in the 'Synopsis') in the Transactions of the American Academy, which have been collected together into five quarto volumes, under the title of 'Observations on the genus *Unio*.' He merely adds "Lea" after the name, without making any reference to the volume or page or plate of the 'Transactions' or 'Observations' in which they are figured and described, so that the student has to look out each species through the various volumes, where the shells are arranged without order as they occurred to hand.

In the same manner the names in the "Geographical Distribution of the Species" are not accompanied by a reference to the page in which the species occur in the 'Synopsis.' Their place in the Systematic List can only be found by turning to the "Index of Species," which carefully abstains from referring to the place where the species can be found described in the 'Transactions' or 'Observations,' though this edition of the 'Synopsis' is now printed of the same size as those works, and may be regarded as a sixth volume of the 'Observations.'

We had hoped that as the author became more acquainted with the difficulties of the subject, he would have obliterated the ill-natured observations he had made on Rafinesque, Say, Barnes, Conrad, Deshayes, and other authors, but his dislike appears to have increased with his knowledge, and in every page we have some special pleading why Mr. Lea's name should be adopted, and that of some other author rejected, forgetting that his successors, not having these personal feelings, will examine the question for themselves and do justice to his predecessors and contemporaries.

Mr. Lea informs us in this edition, that he has doubled the number of species in his 'Synopsis' by the new species he has described: if only a tithe of the 300 species which he has described as new prove good, which we venture to doubt, knowing how exceedingly variable these shells are in our European rivers, Mr. Lea's name will be handed down to posterity as an active collector and describer of these mutable shells. Mr. Lea appears to have no other idea of arranging the species, than by taking some leading character, as the general form and kind of surface, and applying it artificially for the divisions of the species of each of the subgenera:—the result is most unsatisfactory and artificial.

If the shells do not afford good sectional characters, we believe it would have been preferable to have arranged the species in each subgenus geographically, dividing the numerous American species according to the two sides of the continent they inhabited, and subdividing them according to the great river-system to which they be-

longed; at any rate it would have been putting to the test the geographical characters of the species, and this arrangement can only be made by an American acquainted with the branches and creeks of the different rivers.

Mr. Lea uses this test for the European species, and reduces all the *Anodons* to a single species, but believes that a very little stream in America affords at least one, and often many, distinct species of these animals!—J. E. G.

PROCEEDINGS OF LEARNED SOCIETIES.

ZOOLOGICAL SOCIETY.

December 10, 1850.—Prof. Owen, V.P., F.R.S., in the Chair.

Observations on the destructive species of Dipterous Insects known in Africa under the names of the Tsetse, Zimb, and Tsaltsalya, and on their supposed connexion with the Fourth Plague of Egypt. By J. O. Westwood, F.L.S., Pres. Ent. Soc. etc.

The species of insects which attack the larger of our domestic quadrupeds may be divided into two chief classes; first, those which do so in order to obtain a supply of food for their own support; and second, those which do so with the object of depositing their eggs in such a position, that the larvæ, when hatched from them, will be certain of finding a proper supply of food derived from some part of the animal, either external or internal.

The insects composing the first of these two classes require for the performance of their dreaded functions an organization of the parts of the mouth especially fitting them to pierce the skins and hides of the quadrupeds upon the blood of which they subsist, and we accordingly find that it is precisely these insects which have the mouth-organs most fully developed in the different families to which they respectively belong. The *Stomoxys calcitrans*, and especially the different species of *Tabanus*, are pre-eminent in this respect; and the formidable array of lancets in the mouth of one of the latter insects is not to be met with elsewhere among the whole of the flies composing the order Diptera, to which they belong. The effects of the attacks of these insects upon the horse are perceived by the drops of blood which flow from the orifices caused by their bites, and sometimes these wounds are so numerous, that the beasts "are all in a gore of blood." A still smaller species, named by Linnæus the *Culex equinus*, also infests the horse in infinite numbers, running under the mane and amongst the hair, and piercing the skin to suck their blood. This insect, although given by Linnæus as a *Culex*, appears from his description to belong to the genus *Simulium*, to which genus also belongs an insect of fearful note, which attacks the horned cattle in Servia and the Bannat, penetrating the generative